CLAIMS

What is claimed is:

1. A method of rehabilitation following spinal cord injury, comprising administering to a mammalian patient with injury to the spinal cord causing reduction of locomotor function and neuromuscular strength, a therapeutically effective amount of at least one $ß_2$ adrenergic agonist to increase locomotor function and neuromuscular strength in the patient.

2. The method of claim 1 wherein the $ß_2$ adrenergic agonist is selected from the group consisting of salmeterol, ractopamine, cimaterol, BRL-47672, terbutaline, fenoterol, memproterenol, isoprenline, MJ-9184-1, trimetoquinol, tetrahydropapaveroline, soterenol, salmefamol, rimiterol, QH-25, isoetharine, R-804, orciprenaline, quinterenol, sulfonterol, dobutamine, and isoproterenol and salts of the foregoing.

3. The method of claim 1 wherein the $ß_2$ adrenergic agonist is selected from the group consisting of salmeterol, ractopamine, cimaterol, BRL-47672, terbutaline, fenoterol, metaproterenol, and isoprenline and salts of the foregoing

4. The method of claim 1 wherein the $ß_2$ adrenergic agonist comprises clenbuterol and salts thereof.

5. The method of claim 1 wherein the $ß_2$ adrenergic agonist comprises salbutamol and salts thereof.

6. The method of claim 1 wherein the effective amount of the $ß_2$ adrenergic agonist is from about 0.5 to about 1000 µg/day per kg of body weight.

7. The method of claim 4 wherein the effective amount of clenbuterol is from about 0.5 to about 1000 µg/day per kg of body weight.

8. The method of claim 5 wherein the effective amount of salbutamol is from about 0.5 to about 1000 µg/day per kg of body weight.

9. The method of claim 4 wherein the effective amount of clenbuterol is greater than about 0.25 g/day per kg body weight.

10. The method of claim 5 wherein the effective amount of salbutamol is greater than about 0.25 g/day per kg body weight.

11. A pharmacological composition which comprises a β_2 adrenergic agonist formulated in a dosage and with an appropriate carrier for administering to a mammalian patient with injury to the spinal cord causing reduction of locomotor function and neuromuscular strength, a therapeutically effective amount of at least one β_2 adrenergic agonist to increase locomotor function and neuromuscular strength in the patient.

12. The composition of claim 11 wherein the β_2 adrenergic agonist is selected from the group consisting of salmeterol, ractopamine, cimaterol, BRL-47672, terbutaline, fenoterol, memproterenol, isoprenaline, MJ-9184-1, trimetoquinol, tetrahydropapaveroline, soterenol, salmefamol, rimiterol, QH-25, isoetharine, R-804, orciprenaline, quinterenol, sulfonterol, dobutamine, and isoproterenol and salts of the foregoing.

13. The composition of claim 11 wherein the β_2 adrenergic agonist is selected from the group consisting of salmeterol, ractopamine, cimaterol, BRL-47672, terbutaline, fenoterol, metaproterenol, and isoprenaline and salts of the foregoing

14. The composition of claim 11 wherein the β_2 adrenergic agonist comprises clenbuterol and salts thereof.

15. The method of composition 11 wherein the β_2 adrenergic agonist comprises salbutamol and salts thereof.

16. The composition of claim 1 wherein the amount of the β_2 adrenergic agonist in the composition is from about 0.5 to about 1000 μg.

17. The composition of claim 14 wherein the amount of clenbuterol in the composition is from about 0.5 to about 1000 μg.

18. The composition of claim 15 wherein the amount of salbutamol in the composition is from about 0.5 to about 1000 μg.

19. The composition of claim 14 wherein the amount of clenbuterol is greater than about 0.25 g.

20. The composition of claim 15, wherein the amount of salbutamol is greater than about 0.25 g.

21. A method of treating neurological conditions, comprising administering to a mammalian patient with a neurological condition causing reduction of locomotor function and neuromuscular strength, a therapeutically effective amount of at least one β_2 adrenergic agonist to increase locomotor function and neuromuscular strength in the patient.

22. The method of claim 21, wherein the condition is motor neuron degeneration.

23. The method of claim 21 wherein the β_2 adrenergic agonist is selected from the group consisting of salmeterol, ractopamine, cimaterol, BRL-47672, terbutaline, fenoterol, memproterenol, isoprenaline, MJ-9184-1, trimetoquinol, tetrahydropapaveroline, soterenol, salmefamol, rimiterol, QH-25, isoetharine, R-804, orciprenaline, quinterenol, sulfonterol, dobutamine, and isoproterenol and salts of the foregoing.

24. The method of claim 21 wherein the β_2 adrenergic agonist is selected from the group consisting of salmeterol, ractopamine, cimaterol, BRL-47672, terbutaline, fenoterol, metaproterenol, and isoprenaline and salts of the foregoing

25. The method of claim 21 wherein the β_2 adrenergic agonist is clenbuterol and salts thereof.

26. The method of claim 21 wherein the β_2 adrenergic agonist is salbutamol and salts thereof.

27. The method of claim 21 wherein the effective amount of the β_2 adrenergic agonist is from about 0.5 to about 1000 µg/day per kg of body weight.

28. The method of claim 25 wherein the effective amount of clenbuterol is from about 0.5 to about 1000 µg/day per kg of body weight.

29. The method of claim 26 wherein the effective amount of salbutamol is from about 0.5 to about 1000 µg/day per kg of body weight.

30. The method of claim 25 wherein the effective amount of clenbuterol is greater than about 0.25 g/day per kg body weight.

31. The method of claim 26 wherein the effective amount of salbutamol is greater than about 0.25 g/day per kg body weight.

32. A pharmacological composition which comprises a β_2 adrenergic agonist formulated in a dosage and with an appropriate carrier for administering to a mammalian patient with a neurological condition causing reduction of locomotor function and neuromuscular strength, a therapeutically effective amount of at least one β_2 adrenergic agonist to increase locomotor function and neuromuscular strength in the patient.

33. The composition of claim 32, wherein the condition is motor neuron degeneration.

34. The composition of claim 32 wherein the β_2 adrenergic agonist is selected from the group consisting of salmeterol, ractopamine, cimaterol, BRL-47672, terbutaline, fenoterol, memproterenol, isoprenaline, MJ-9184-1, trimetoquinol, tetrahydropapaveroline, soterenol, salmefamol, rimiterol, QH-25, isoetharine, R-804, orciprenaline, quinterenol, sulfonterol, dobutamine, and isoproterenol and salts of the foregoing.

35. The composition of claim 32, wherein the β_2 adrenergic agonist is clenbuterol and salts thereof.

36. The method of composition 32, wherein the β_2 adrenergic agonist is salbutamol and salts thereof.